

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ALIGN TECHNOLOGY, INC.,)	
)	
Plaintiff,)	
)	
v.)	C.A. No. 17-1646-LPS
)	
3SHAPE A/S, 3SHAPE TRIOS A/S, and)	JURY TRIAL DEMANDED
3SHAPE INC.,)	
)	
Defendants.)	

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Align Technology, Inc. (“Align”) demands a trial by jury on all issues so triable and, for its complaint against Defendants 3Shape A/S, 3Shape Trios A/S, and 3Shape Inc. (collectively, “3Shape” or “Defendants”), alleges as follows:

THE PARTIES

1. Align is a Delaware corporation incorporated in April 1997, with its principal place of business in San Jose, California.
2. On information and belief, 3Shape A/S (“3Shape A/S”) is a Danish corporation with a principal place of business at Holmens Kanal 7, 1060 Copenhagen K, Denmark.
3. On information and belief, 3Shape Trios A/S (“3Shape Trios A/S”) is a Danish corporation with a principal place of business at Holmens Kanal 7, 1060 Copenhagen K, Denmark.
4. On information and belief, 3Shape Trios A/S is related to 3Shape A/S with both corporations commonly held by the same holding company, 3Shape Holding A/S.

5. On information and belief, 3Shape Inc. (“3Shape US”) is a Delaware corporation with a principal place of business at 10 Independence Boulevard, Suite 150, Warren, New Jersey 07059.

6. Defendants make, use, sell, and offer for sale in the United States and/or import into the United States the TRIOS and TRIOS 3 scanners and software products that embody systems and/or methods for intraoral scanning for dental and orthodontic applications.

JURISDICTION AND VENUE

7. This lawsuit is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code.

8. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

9. This Court has personal jurisdiction over Defendants in that they have, directly or through agents and/or intermediaries, committed acts within Delaware giving rise to this action and/or has established minimum contacts with Delaware such that the exercise of jurisdiction would not offend traditional notions of fair play and justice.

10. On information and belief, Defendants regularly conduct business in Delaware, and purposefully avail themselves of the privileges of conducting business in Delaware. In particular, on information and belief, Defendants, directly and/or through their agents and/or intermediaries, make, use, import, offer for sale, sell, and/or advertise their products and affiliated services in Delaware. Defendants have placed, and continue to place, infringing products into the stream of commerce, via an established distribution channel, with the knowledge and/or understanding that such products are sold in the United States including in Delaware and specifically including this District.

11. On information and belief, Defendants have derived substantial revenue from their infringing activity occurring within the State of Delaware and within this District and/or should reasonably expect their actions to have consequences in Delaware. In addition, Defendants have, and continue to, knowingly induce infringement within this District by advertising, marketing, offering for sale and/or selling devices containing infringing functionality within this District to at least resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users, and by providing instructions, user manuals, advertising and/or marketing materials which facilitate, direct or encourage the use of infringing functionality with knowledge thereof.

12. Defendants have committed patent infringement in Delaware that has led to foreseeable harm and injury to Align, a Delaware corporation.

13. Additionally, 3Shape A/S is subject to jurisdiction in the United States, and specifically in Delaware, pursuant to FED. R. CIV. P. 4(k)(2). 3Shape A/S has contacts with the United States that include, *inter alia*, advertising, offering to sell, and/or selling its products and software throughout the United States, including Delaware and this District.

14. Additionally, 3Shape Trios A/S is subject to jurisdiction in the United States, and specifically in Delaware, pursuant to FED. R. CIV. P. 4(k)(2). 3Shape Trios A/S has contacts with the United States that include, *inter alia*, importing, advertising, offering to sell, and/or selling 3Shape products and software throughout the United States, including Delaware and this District.

15. This Court also has personal jurisdiction over 3Shape US because 3Shape US is a Delaware corporation and thus resides within, and has consented to, personal jurisdiction within this District.

16. The Court further has personal jurisdiction over 3Shape US because 3Shape US has committed, or aided, abetted, contributed, and/or participated in the commission of tortious acts of patent infringement that have led to foreseeable harm and injury to Align, which is a corporation organized and existing under the laws of the State of Delaware. Likewise, 3Shape A/S, 3Shape Trios A/S, and/or 3Shape US either alone or in concert with each other or others has committed, or aided, abetted, contributed, and/or participated in the commission of tortious acts of patent infringement that have led to foreseeable harm and injury to Align.

17. Venue is proper pursuant to 28 U.S.C. §§ 1391 and 1400(b).

THE PATENTS-IN-SUIT

18. On December 6, 2016, the U.S. Patent and Trademark Office duly and lawfully issued U.S. Patent No. 9,510,757 (“the ’757 patent”), entitled “Identification of Areas of Interest During Intraoral Scans” naming Avi Kopelman, Michael Sabina, Adi Levin, Mikhail Minchenkov, and Maria Anufrienko as the inventors. Align is the owner by assignment of all right, title and interest in the ’757 patent and has exclusive right to bring suit to enforce the patent. Evidence of such assignment has been recorded with the U.S. Patent and Trademark Office at Reel/Frame 035791/0020. A true and correct copy of the ’757 patent is attached hereto as Exhibit 1.

19. On September 26, 2006, the U.S. Patent and Trademark Office duly and lawfully issued U.S. Patent No. 7,112,065 (“the ’065 patent”), entitled “Method for Defining a Finish Line of a Dental Prosthesis” naming Avi Kopelman and Eldad Taub as the inventors. Align is the owner by assignment of all right, title and interest in the ’065 patent and has exclusive right to bring suit to enforce the patent. Evidence of such assignment has been recorded with the U.S.

Patent and Trademark Office at Reel/Frame 034483/0901. A true and correct copy of the '065 patent is attached hereto as Exhibit 2.

20. On March 29, 2016, the U.S. Patent and Trademark Office duly and lawfully issued U.S. Patent No. 9,299,192 ("the '192 patent"), entitled "Methods and Systems for Creating and Interacting With Three Dimensional Virtual Models" naming Avi Kopelman as the inventor. Align is the owner by assignment of all right, title and interest in the '192 patent and has exclusive right to bring suit to enforce the patent. Evidence of such assignment has been recorded with the U.S. Patent and Trademark Office at Reel/Frame 034545/0470. A true and correct copy of the '192 patent is attached hereto as Exhibit 3.

21. On August 30, 2016, the U.S. Patent and Trademark Office duly and lawfully issued U.S. Patent No. 9,427,916 ("the '916 patent"), entitled "Method for Preparing a Physical Plaster Model" naming Eldad Taub and Avi Kopelman as the inventors. Align is the owner by assignment of all right, title and interest in the '916 patent and has exclusive right to bring suit to enforce the patent. Evidence of such assignment has been recorded with the U.S. Patent and Trademark Office at Reel/Frame 034483/0930. A true and correct copy of the '916 patent is attached hereto as Exhibit 4.

22. On June 4, 2013, the U.S. Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,454,364 ("the '364 patent"), entitled "Method for Preparing a Physical Plaster Model" naming Eldad Taub and Avi Kopelman as the inventors. Align is the owner by assignment of all right, title and interest in the '364 patent and has exclusive right to bring suit to enforce the patent. Evidence of such assignment has been recorded with the U.S. Patent and Trademark Office at Reel/Frame 034483/0930. A true and correct copy of the '364 patent is attached hereto as Exhibit 5.

23. On September 30, 2014, the U.S. Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,845,330 (“the ’330 patent”), entitled “Method for Preparing a Physical Plaster Model” naming Eldad Taub and Avi Kopelman as the inventors. Align is the owner by assignment of all right, title and interest in the ’330 patent and has exclusive right to bring suit to enforce the patent. Evidence of such assignment has been recorded with the U.S. Patent and Trademark Office at Reel/Frame 034483/0930. A true and correct copy of the ’330 patent is attached hereto as Exhibit 6.

BACKGROUND

24. Align is a global medical device company with industry leading innovative products such as iTero intraoral scanners and OrthoCAD software that help dental and orthodontic professionals deliver effective, cutting-edge dental and orthodontic options to their patients.

25. Align’s iTero intraoral scanners scan and provide, in conjunction with Align’s OrthoCAD software, 3D imaging of an intraoral surface, such as the teeth and gums, without drying and powdering the intraoral surface, resulting in a digital impression. Align’s iTero intraoral scanners and the software that works in conjunction with the scanner thus eliminate the need for traditional teeth impressions typically taken with an elastomeric or other material.

26. The digital impression captured by Align’s iTero intraoral scanners, when teamed with Align’s OrthoCAD software, can be used in a variety of dental and orthodontic applications such as, for example, identifying certain areas on the model, stitching different images together to produce a more accurate model, defining a finish line for a dental device, locking certain portions of the model that may be difficult to accurately scan, and outputting data for generating a physical model of the teeth.

27. Align's iTero intraoral scanner and OrthoCAD software constitute a proprietary system and method for treating, among other things, malocclusion, misalignment, and/or chipped or missing teeth using a high precision, high speed intraoral scanner and related software to create a variety of orthodontic and dental devices including, but not limited to, crowns, bridges, bracket templates, aligners and implants. Each dental device is custom-manufactured for each patient using computer-aided design techniques and sophisticated computer graphic interfaces to communicate with the patient's dental or orthodontic professional in the planning and implementation of the customized treatment program.

28. Align's iTero intraoral scanner and OrthoCAD software, developed by Align over many years and at great expense and effort, represents a breakthrough in the manufacturing principle of "mass customization" and a vast improvement over conventional methods for treating, among other things, chipped or missing teeth, misalignment of teeth and malocclusion. Additionally, the iTero intraoral scanner and OrthoCAD software provide a "chair-side" platform for live viewing of the digital impression as it is being built on the display screen during scanning, for accessing valuable digital diagnosis and treatment tools, and for enhancing accuracy of records, treatment efficiency, and the overall patient experience. The innovations embodied in Align's iTero intraoral scanner and OrthoCAD software are protected by numerous United States and foreign patents.

29. On information and belief, defendant 3Shape designs, develops, manufactures, and markets the TRIOS and TRIOS 3 scanners, as well as the related Dental System software products that include software modules including, but not limited to, the Implant Studio, Ortho System, Ortho Analyzer, Ortho Planner, Appliance Designer and Ortho Control Patent (hereinafter "Dental System software products"). Moreover, 3Shape is involved in the sale of

and/or importation into the United States of intraoral scanners, digital models, and digital data and Dental System software products for dental and orthodontic applications including, but not limited to, crowns, bridges, bracket templates, aligners and implants. 3Shape's intraoral scanners, digital and physical models generated from digital data using 3Shape software, and 3Shape's software products for dental and orthodontic applications described above embody and/or use the patented apparatuses, systems, and methods at issue.

30. 3Shape's TRIOS and TRIOS 3, as well as 3Shape's related Dental System software products, directly compete with the Align's iTero scanners and OrthoCad software. On information and belief, 3Shape developed, made and sold its intraoral scanners and software with the intent to directly compete with Align's intraoral scanners and software. Before introducing its products, 3Shape was aware the structure, design and operation of Align's patented intraoral scanners and software, including but not limited to intraoral scanners and software developed by Cadent Holdings, Inc. ("Cadent") which Align acquired on April 29, 2011. Moreover, 3Shape has previously entered into agreements with Align that provided 3Shape with significant access to Align's patented technologies.

31. On information and belief, 3Shape developed, made, and sold its infringing TRIOS and TRIOS 3 scanner solutions and related infringing Dental System software products despite having knowledge of the Align patents at issue based on, at a minimum (i) its knowledge of the Align intraoral scanners and software being covered by numerous patents including the patents at issue through its prior business dealings with Align, including those with Cadent, whereby 3Shape acquired specific and detailed knowledge from Align regarding the structure, function, operation and commercial benefits of the Align products and the patent protection afforded to certain structures, functions and operations of the patented Align technology; (ii) by

virtue of 3Shape's patent prosecution activities wherein Align's patents at issue and/or family members were cited as prior art, including but not limited to U.S. Patent Nos. 9,427,916, 8,454,364, 8,845,330, 9,510,757, applications, or related family members; and/or (iii) by virtue of 3Shape's U.S. Food and Drug Section 510(k) premarket notification of intent to market the accused products which identifies 3Shape's accused products as substantially equivalent to Align's patent practicing products (*see, e.g.*, Exhibit 7).

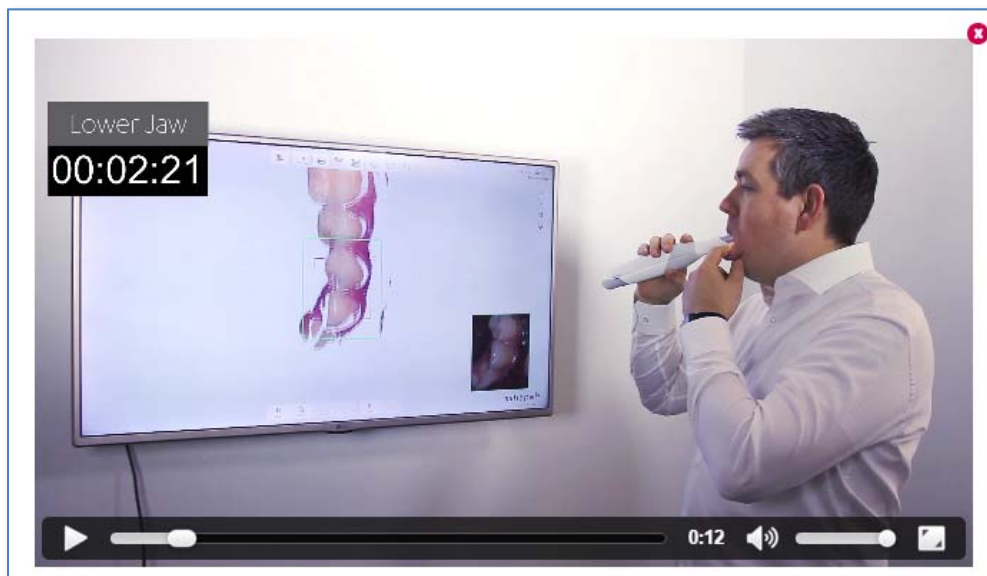
COUNT ONE – INFRINGEMENT OF THE '757 PATENT

32. Align incorporates by reference its allegations in Paragraphs 1-31 as if fully restated in this paragraph.

33. On information and belief, 3Shape has been and is now directly and indirectly infringing, literally and/or under the doctrine of equivalents, the '757 patent by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products covered by one or more of the claims of the '757 patent, including the TRIOS and TRIOS 3, as well as the related Dental System software products.

34. The '757 patent is generally directed to identifying areas of interest during an intraoral scan of a patient. Claim 1 of the '757 patent recites a method comprising: receiving a first intraoral image of a dental site during an intraoral scan session; identifying, by a processing device, a first candidate intraoral area of interest from the first intraoral image; receiving a second intraoral image of the dental site during the intraoral scan session; verifying, by the processing device, the first candidate intraoral area of interest as an intraoral area of interest based on comparison of the second intraoral image to the first intraoral image; and providing, during the intraoral scan session, an indication of the intraoral area of interest.

35. 3Shape's TRIOS and TRIOS 3, as well as the related Dental System software products, infringe at least claim 1 of the '757 patent. For example, 3Shape's product documentation demonstrates 3Shape's TRIOS and TRIOS 3 utilizing a method of identifying a patient's areas of interest during an intraoral scan through the use of the Dental System. (*See, e.g.,* <http://www.3shape.com/-/media/files/brochures/trios/3shape-trios-2017-en.pdf?la=en>.) For example, 3Shape's TRIOS and TRIOS 3, used with the related Dental System software products, receive a first intraoral image of a dental site during an intraoral scan session; identify, by a processing device, a first candidate intraoral area of interest from the first intraoral image; receive a second intraoral image of the dental site during the intraoral scan session; verify, by the processing device, the first candidate intraoral area of interest as an intraoral area of interest based on comparison of the second intraoral image to the first intraoral image; and provide, during the intraoral scan session, an indication of the intraoral area of interest, as shown, for example, in the demonstration videos and TRIOS brochure below.



(See, e.g., 3Shape TRIOS® Video (3Shape website, available at:

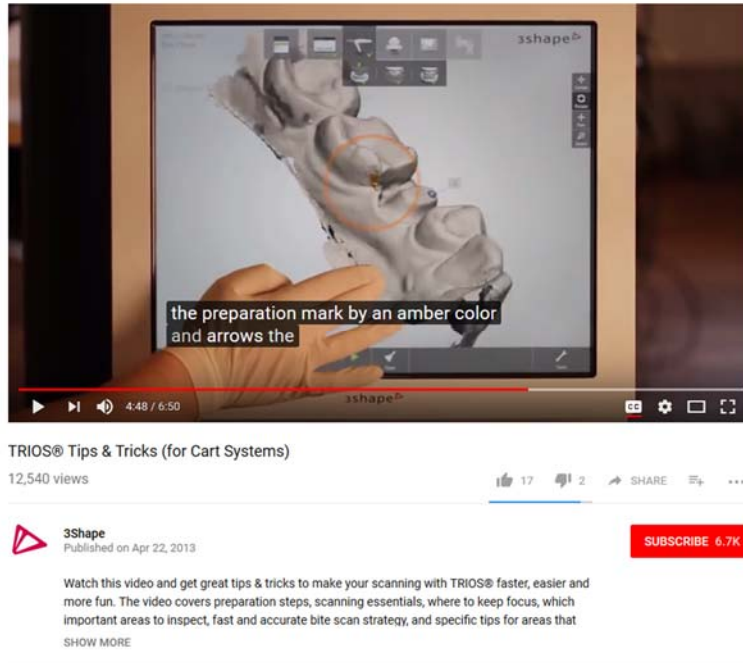
<http://www.3shape.com/products/trios/intraoral-scanners#myModal>.)



(See, e.g., 3Shape marketing video (3Shape YouTube Channel, available at:

<https://www.youtube.com/watch?v=hIP1CbFnFPU>.)





(See, e.g., 3Shape Marketing Material at https://youtu.be/xk4pZI_VPN0.)



(See, e.g., 3Shape TRIOS® Digital Impression Solution Brochure (3Shape website, available at: <http://www.3shape.com/-/media/files/brochures/trios/3shape-trios-2017-en.pdf?la=en>).

36. 3Shape possesses knowledge of and is aware of the '757 patent by virtue of, at a minimum, filing this Complaint and, on information and belief, had prior knowledge of the '757 patent by virtue of the prior business dealings between 3Shape and Align and other facts described above.

37. 3Shape also has been and is now actively inducing infringement of one or more claims of the '757 patent, either literally or under the doctrine of equivalents.

38. On information and belief, 3Shape A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement

by others. On information and belief, 3Shape A/S induces 3Shape US and/or 3Shape Trios A/S to infringe.

39. On information and belief, 3Shape US alone and/or acting in concert with, directing and/or authorizing 3Shape A/S and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others.

40. On information and belief, 3Shape Trios A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape Trios A/S induces 3Shape US and/or 3Shape A/S to infringe.

41. 3Shape has intended, and continues to intend to induce infringement of the '757 patent by others and has knowledge, with specific intent, that the inducing acts would cause infringement or has been willfully blind to the possibility that its inducing acts would cause the infringing acts. For example, 3Shape is aware that the features claimed in the '757 patent are features in the TRIOS, TRIOS 3, and/or the related Dental System software products and are features used by others that purchase TRIOS, TRIOS 3, and/or Dental System and, therefore, that purchasers will infringe the '757 patent by using the TRIOS, TRIOS 3, and/or the related Dental System software products. 3Shape actively induces infringement of the '757 patent with knowledge and the specific intent to encourage that infringement by, *inter alia*, disseminating the TRIOS, TRIOS 3, and/or the related Dental System software products and providing promotional

materials, marketing materials, training materials, instructions, product manuals, user guides, and technical information (including but not limited to the marketing materials and videos described in this Count of the Complaint) to others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or Dental System. Those third parties directly infringe the '757 patent by making, using, selling, offering for sale, and/or importing the TRIOS, TRIOS 3, and/or the related Dental System software products.

42. 3Shape also has been and is now contributing to the infringement of one or more claims of the '757 patent, either literally or under the doctrine of equivalents.

43. 3Shape has actively, knowingly, and intentionally contributed and continues to actively, knowingly, and intentionally contribute to the infringement of the '757 patent by having sold or offered to sell and continuing to sell or offer for sale the TRIOS, TRIOS 3, and/or related Dental System software products within in the United States and/or by importing the TRIOS, TRIOS 3, and/or Dental System software products into the United States, with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or Dental System software products is especially made and/or especially adapted for use in infringement of the '757 patent. 3Shape has contributed to the infringement by others with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or Dental System is a material part of the patented invention, and with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or Dental System is not a staple article of commerce suitable for substantial non-infringing use, and with knowledge that others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products, infringe and will continue to infringe the '757 patent because,

due to their specific designs, the accused products and components thereof do not have any substantial noninfringing uses. 3Shape has such knowledge at least because the claimed features of the '757 patent are used by others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products.

44. On information and belief, 3Shape knew or should have known of the '757 patent and has acted, and continues to act, in an egregious and wanton manner by infringing '757 patent. On information and belief, 3Shape's infringement of the '757 patent has been and continues to be willful and deliberate. The market for intraoral scanners and related dental and orthodontic software products is small and contains a limited number of competitors, with Align being a known pioneer with whom 3Shape has great familiarity. The companies have worked together in the past and 3Shape has had ample access to Align's technology. Upon information and belief, 3Shape knowingly developed and sold its competitive knockoff products in an infringing manner that was known to 3Shape or was so obvious that 3Shape should have known about this infringement.

45. On information and belief, despite knowing that its actions constituted infringement of the '757 patent and/or despite knowing that that there was a high likelihood that its actions constituted infringement of the patent, 3Shape nevertheless continued its infringing actions, and continues to make, use and sell its infringing products.

46. 3Shape's acts of infringement have injured and damaged Align.

47. 3Shape's wrongful conduct has caused Align to suffer irreparable harm resulting from the loss of its lawful patent rights to exclude others from making, using, selling, offering to

sell and importing the patented inventions. Upon information and belief, 3Shape will continue these infringing acts unless enjoined by this Court.

COUNT TWO – INFRINGEMENT OF THE '192 PATENT

48. Align incorporates by reference its allegations in Paragraphs 1-47 as if fully restated in this paragraph.

49. On information and belief, 3Shape has been and is now directly and indirectly infringing, literally and/or under the doctrine of equivalents, the '192 patent by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products covered by one or more of the claims of the '192 patent, including the TRIOS and TRIOS 3, as well as the related Dental System software products.

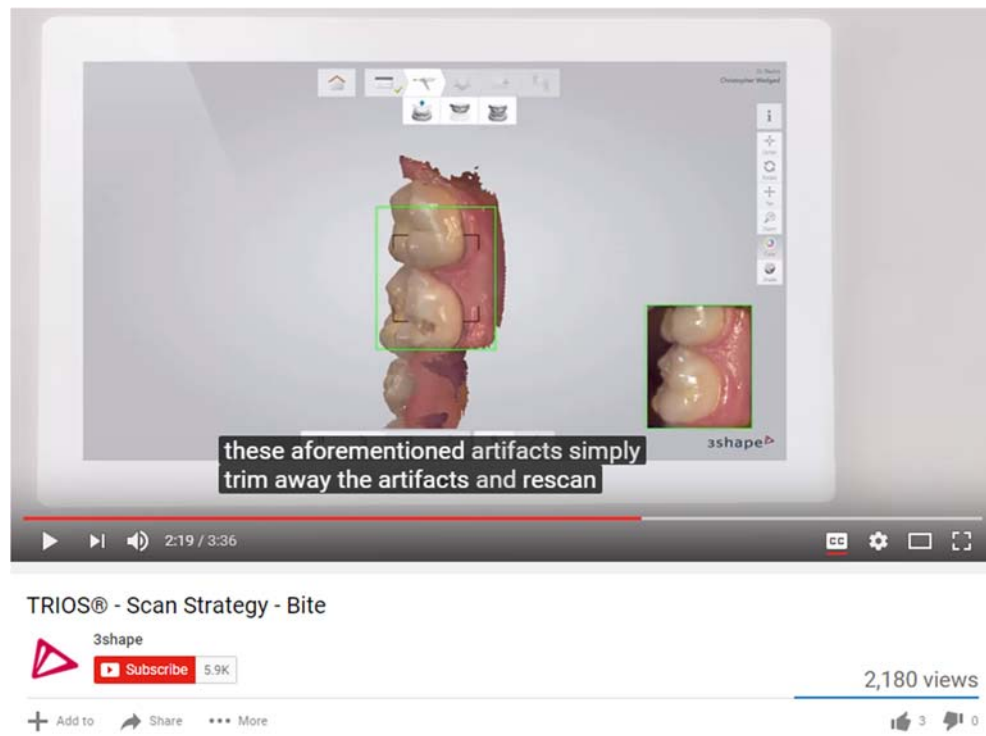
50. The '192 patent is directed to modifying a virtual model of a physical structure with additional 3D data obtained from the physical structure to provide a modified virtual model. Claim 28 of the '192 patent recites a system to generate a modified virtual model of a physical structure, comprising: a display to display images of said modified virtual model; and a computer system operatively connected to the display and comprising a program that, when executed by the computer system, causes the computer system to, display an image of a first virtual model generated from first 3D scan data of the physical structure on the display, wherein said first virtual model fails to properly represent a first physical part of the physical structure, receive user input identifying at least a portion of the first virtual model that is desired to be modified, the user input generated by user interaction with the image of the first virtual model on the display, receive a second virtual model of the physical structure, the second virtual model generated from second 3D scan data of the physical structure, and modify the first virtual model

by replacing at least said identified portion of the first virtual model with a corresponding portion of the second virtual model, thereby providing the modified virtual model.

51. 3Shape's TRIOS and TRIOS 3, as well as the related Dental System software products, infringe at least claim 28 of the '192 patent. For example, 3Shape's TRIOS and TRIOS 3, used with the related Dental System software products, display an image of a first virtual model on a display operatively connected to a computer system, wherein the first virtual model is generated from first 3D scan data of the physical structure, and wherein said first virtual model fails to properly represent a first physical part of the physical structure; receive user input identifying at least a portion of the first virtual model that is desired to be modified, wherein the user input is generated by user interaction with the image on the display; receive a second virtual model of the physical structure with the computer system, the second virtual model generated from second 3D scan data of the physical structure; and modify the first virtual model with the computer system by replacing at least said identified portion of the first virtual model with a corresponding portion of the second virtual model, thereby generating the modified virtual model, as shown, for example, in the 3Shape marketing video below.



(See, e.g., 3Shape marketing video (3Shape YouTube Channel, available at: <https://www.youtube.com/watch?v=hIP1CbFnFPU>).)



(Id.)

52. 3Shape possesses knowledge of and is aware of the '192 patent by virtue of, at a minimum, filing this Complaint and, on information and belief, had prior knowledge of the '192 patent by virtue of the prior business dealings between 3Shape and Align and other facts described above.

53. 3Shape also has been and is now actively inducing infringement of one or more claims of the '192 patent, either literally or under the doctrine of equivalents.

54. On information and belief, 3Shape A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape A/S induces 3Shape US and/or 3Shape Trios A/S to infringe.

55. On information and belief, 3Shape US alone and/or acting in concert with, directing and/or authorizing 3Shape A/S and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others.

56. On information and belief, 3Shape Trios A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape Trios A/S induces 3Shape US and/or 3Shape A/S to infringe.

57. 3Shape has intended, and continues to intend to induce infringement of the '192 patent by others and has knowledge, with specific intent, that the inducing acts would cause infringement or has been willfully blind to the possibility that its inducing acts would cause the infringing acts. For example, 3Shape is aware that the features claimed in the '192 patent are features in the TRIOS, TRIOS 3, and/or the related Dental System software products and are features used by others that purchase TRIOS, TRIOS 3, and/or Dental System and, therefore, that purchasers will infringe the '192 patent by using the TRIOS, TRIOS 3, and/or the related Dental System software products. 3Shape actively induces infringement of the '192 patent with knowledge and the specific intent to encourage that infringement by, *inter alia*, disseminating the TRIOS, TRIOS 3, and/or the related Dental System software products and providing promotional materials, marketing materials, training materials, instructions, product manuals, user guides, and technical information to others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products (including but not limited to the marketing video described in this Count of the Complaint). Those third parties directly infringe the '192 patent by making, using, selling, offering for sale, and/or importing the TRIOS, TRIOS 3, and/or the related Dental System software products.

58. 3Shape also has been and is now contributing to the infringement of one or more claims of the '192 patent, either literally or under the doctrine of equivalents.

59. 3Shape has actively, knowingly, and intentionally contributed and continues to actively, knowingly, and intentionally contribute to the infringement of the '192 patent by having sold or offered to sell and continuing to sell or offer for sale the TRIOS, TRIOS 3, and/or related Dental System software products within in the United States and/or by importing the TRIOS,

TRIOS 3, and/or the related Dental System software products into the United States, with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is especially made and/or especially adapted for use in infringement of the '192 patent. 3Shape has contributed to the infringement by others with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is a material part of the patented invention, and with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is not a staple article of commerce suitable for substantial non-infringing use, and with knowledge that others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products, infringe and will continue to infringe the '192 patent because, due to their specific designs, the accused products and components thereof do not have any substantial noninfringing uses. 3Shape has such knowledge at least because the claimed features of the '192 patent are used by others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products.

60. On information and belief, 3Shape knew or should have known of the '192 patent and has acted, and continues to act, in an egregious and wanton manner by infringing '192 patent. On information and belief, 3Shape's infringement of the '192 patent has been and continues to be willful and deliberate. The market for intraoral scanners and related dental and orthodontic software products is small and contains a limited number of competitors, with Align being a known pioneer with whom 3Shape has great familiarity. The companies have worked together in the past and 3Shape has had ample access to Align's technology. Upon information

and belief, 3Shape knowingly developed and sold its competitive knockoff products in an infringing manner that was known to 3Shape or was so obvious that 3Shape should have known about this infringement.

61. On information and belief, despite knowing that its actions constituted infringement of the '192 patent and/or despite knowing that there was a high likelihood that its actions constituted infringement of the patent, 3Shape nevertheless continued its infringing actions, and continues to make, use and sell its infringing products.

62. 3Shape's acts of infringement have injured and damaged Align.

63. 3Shape's wrongful conduct has caused Align to suffer irreparable harm resulting from the loss of its lawful patent rights to exclude others from making, using, selling, offering to sell and importing the patented inventions. Upon information and belief, 3Shape will continue these infringing acts unless enjoined by this Court.

COUNT THREE – INFRINGEMENT OF THE '065 PATENT

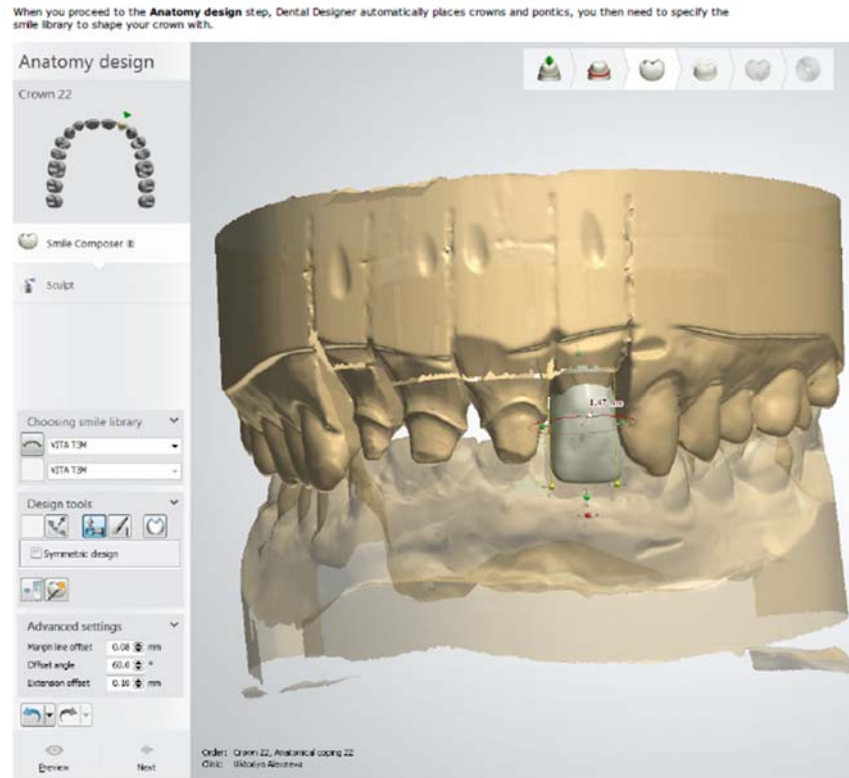
64. Align incorporates by reference its allegations in Paragraphs 1-63 as if fully restated in this paragraph.

65. On information and belief, 3Shape has been and is now directly and indirectly infringing, literally and/or under the doctrine of equivalents, the '065 patent by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products covered by one or more of the claims of the '065 patent, including the TRIOS and TRIOS 3, as well as the related Dental System software products.

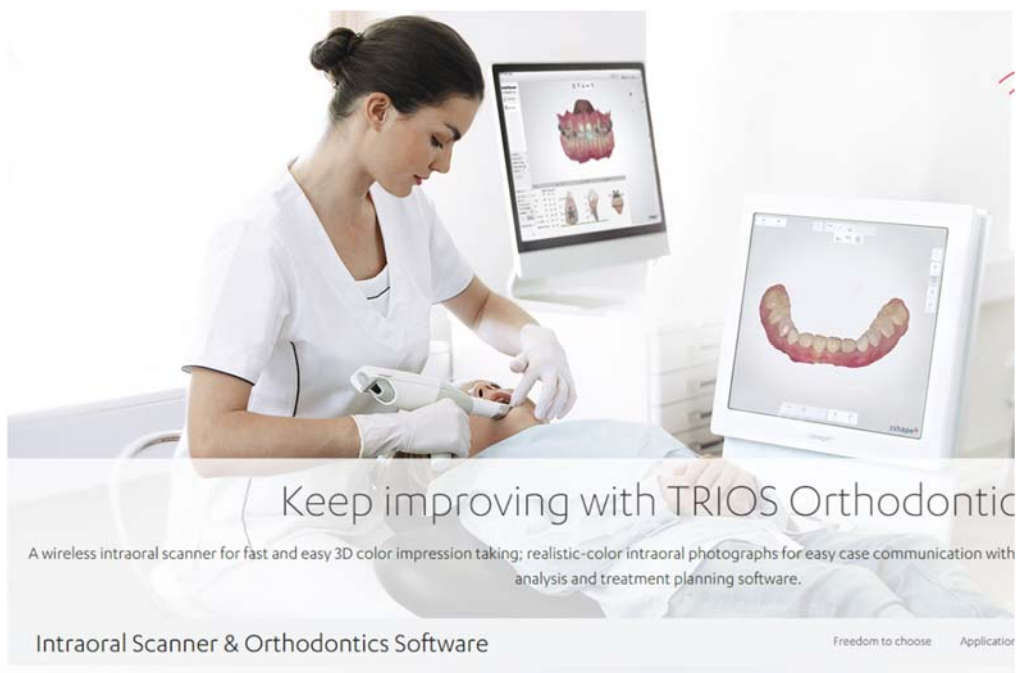
66. The '065 patent is generally directed to providing a method that enables a dental practitioner to define a finish line of a dental prosthesis of at least one tooth to be fitted over a tooth preparation. Claim 1 of the '065 patent recites a computer-based prosthodontic method for

enabling a dental practitioner to define a finish line of a dental prosthesis of at least one tooth to be fitted over a tooth preparation, comprising: providing a three-dimensional (3D) digital data relating to the patient's dentition, said 3D data includes data representative of the surface topology of said preparation and its surroundings; generating first finish line data representative of at least a portion of said finish line and superimposing an image of said finish line on an image of said dentition; obtaining second finish line data determined on the basis of input received from a dental practitioner; and using said second finish line data to update said first finish line data and superimposing the updated data on the dentition image.

67. 3Shape's TRIOS, TRIOS 3, and/or the related Dental System software products, infringe at least claim 1 of the '065 patent. For example, 3Shape's TRIOS and TRIOS 3, used with the related Dental System software products, provide a three-dimensional (3D) digital data relating to the patient's dentition, said 3D data includes data representative of the surface topology of said preparation and its surroundings; generate first finish line data representative of at least a portion of said finish line and superimposing an image of said finish line on an image of said dentition; obtain second finish line data determined on the basis of input received from a dental practitioner; and use said second finish line data to update said first finish line data and superimposing the updated data on the dentition image, as shown, for example, in the 3Shape user manuals and marketing materials and videos below.



(See, e.g., 3Shape User Manual at 49.)



(See, e.g., 3Shape marketing material (3Shape website, available at:

<http://www.3shape.com/en/products/orthodontic-system/intraoral-scanner-orthodontics-software#myModal>)).)



You can switch between margin lines when you have a few by pressing the **Next/Previous** buttons. Press **Done** when finished.

Margin line visibility is toggled with the **Margins** button. The button appears at **Analyze Scan** step when the **Margin Line** tool is active or after you edited the margin line.

(See, e.g., 3Shape 2014 Trios Manual at 36.)

6.8.7. Line Editing

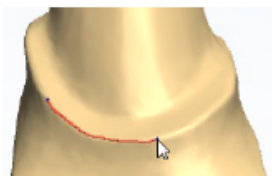
This chapter describes general line editing options available in Dental System for margin lines and splines. For specific details, please refer to the corresponding chapters within the manual.

LINE DRAWING

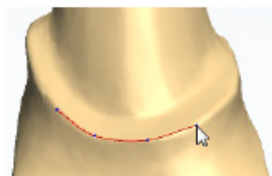
A line can be drawn either by (A) using the fast edit option or (B) placing sequential points on the surface of a model:

A) Press the left mouse button and move the cursor to draw a line on the model. The fast edit option is the easier and preferred method to work with lines.

B) Left-click on the model to shape a line with a sequence of points.



Fast edit line drawing



Placing points to shape a line

LINE EDITING

The following options are available for line editing:

You can edit a line on the model in fast edit mode by drawing the desired changes while keeping the left mouse button pressed:



Incorrectly placed margin line



Editing in fast edit mode



Adjusted margin line

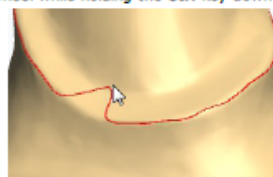
The radius of applied change during line editing is adjusted by turning the mouse scroll wheel while holding the **Ctrl** key down.



Ctrl key indicates affecting radius

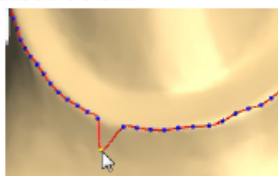


Indicated point

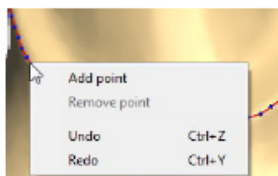


The line adjusted to the point

With points visualization enabled, you can drag the points to adjust the line or use the right-click menu options as shown on the images. To undo or redo line operations, you can either use the right-click menu, **Ctrl + Z** / **Ctrl + Y** keyboard keys or the **Undo** / **Redo** buttons when available in the form.



Line point moved with the cursor



Right-click menu line operations



The Undo/Redo buttons become active once you start editing the line.

Undo / Redo buttons



Note! The line Undo/Redo functionality only works during line editing and is disabled on switching to another tools.

(See, e.g., 3Shape Dental System 2014 User Manual at Chapter 6.8.7.)

68. 3Shape possesses knowledge of and is aware of the '065 patent by virtue of, at a minimum, filing this Complaint and, on information and belief, had prior knowledge of the '065

patent by virtue of the prior business dealings between 3Shape and Align and other facts described above.

69. 3Shape also has been and is now actively inducing infringement of one or more claims of the '065 patent, either literally or under the doctrine of equivalents.

70. On information and belief, 3Shape A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape A/S induces 3Shape US and/or 3Shape Trios A/S to infringe.

71. On information and belief, 3Shape US alone and/or acting in concert with, directing and/or authorizing 3Shape A/S and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others.

72. On information and belief, 3Shape Trios A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape Trios A/S induces 3Shape US and/or 3Shape A/S to infringe.

73. 3Shape has intended, and continues to intend to induce infringement of the '065 patent by others and has knowledge, with specific intent, that the inducing acts would cause

infringement or has been willfully blind to the possibility that its inducing acts would cause the infringing acts. For example, 3Shape is aware that the features claimed in the '065 patent are features in the TRIOS, TRIOS 3, and/or the related Dental System software products and are features used by others that purchase TRIOS, TRIOS 3, and/or Dental System and, therefore, that purchasers will infringe the '065 patent by using the TRIOS, TRIOS 3, and/or the related Dental System software products. 3Shape actively induces infringement of the '065 patent with knowledge and the specific intent to encourage that infringement by, *inter alia*, disseminating the TRIOS, TRIOS 3, and/or the related Dental System software products and providing promotional materials, marketing materials, training materials, instructions, product manuals, user guides, and technical information to others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or Dental System (including but not limited to the user manuals, marketing materials and videos described in this Count of the Complaint). Those third parties directly infringe the '065 patent by making, using, selling, offering for sale, and/or importing the TRIOS, TRIOS 3, and/or the related Dental System software products.

74. 3Shape also has been and is now contributing to the infringement of one or more claims of the '065 patent, either literally or under the doctrine of equivalents.

75. 3Shape has actively, knowingly, and intentionally contributed and continues to actively, knowingly, and intentionally contribute to the infringement of the '065 patent by having sold or offered to sell and continuing to sell or offer for sale the TRIOS, TRIOS 3, and/or related Dental System software products within in the United States and/or by importing the TRIOS, TRIOS 3, and/or Dental System into the United States, with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is

especially made and/or especially adapted for use in infringement of the '065 patent. 3Shape has contributed to the infringement by others with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is a material part of the patented invention, and with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is not a staple article of commerce suitable for substantial non-infringing use, and with knowledge that others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products, infringe and will continue to infringe the '065 patent because, due to their specific designs, the accused products and components thereof do not have any substantial noninfringing uses. 3Shape has such knowledge at least because the claimed features of the '065 patent are used by others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products.

76. On information and belief, 3Shape knew or should have known of the '065 patent and has acted, and continues to act, in an egregious and wanton manner by infringing '065 patent. On information and belief, 3Shape's infringement of the '065 patent has been and continues to be willful and deliberate. The market for intraoral scanners and related dental and orthodontic software products is small and contains a limited number of competitors, with Align being a known pioneer with whom 3Shape has great familiarity. The companies have worked together in the past and 3Shape has had ample access to Align's technology. Upon information and belief, 3Shape knowingly developed and sold its competitive knockoff products in an

infringing manner that was known to 3Shape or was so obvious that 3Shape should have known about this infringement.

77. On information and belief, despite knowing that its actions constituted infringement of the '065 patent and/or despite knowing that there was a high likelihood that its actions constituted infringement of the patent, 3Shape nevertheless continued its infringing actions, and continues to make, use and sell its infringing products.

78. 3Shape's acts of infringement have injured and damaged Align.

79. 3Shape's wrongful conduct has caused Align to suffer irreparable harm resulting from the loss of its lawful patent rights to exclude others from making, using, selling, offering to sell and importing the patented inventions. Upon information and belief, 3Shape will continue these infringing acts unless enjoined by this Court.

COUNT FOUR – INFRINGEMENT OF THE '916 PATENT

80. Align incorporates by reference its allegations in Paragraphs 1-79 as if fully restated in this paragraph.

81. On information and belief, 3Shape has been and is now directly and indirectly infringing, literally and/or under the doctrine of equivalents, the '916 patent by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products covered by one or more of the claims of the 916 patent, including the TRIOS and TRIOS 3, as well as the related Dental System software products.

82. The '916 patent is generally directed to modifying a virtual model of a physical structure with additional 3D data obtained from the physical structure to provide a modified virtual model. Claim 1 of the '916 patent recites a system for use in fabricating dental appliances, said system comprising: a processor operably coupled to a computer readable storage

medium comprising instructions that, when executed, cause the processor to: receive a virtual three dimensional (3D) representation of a patient's lower arch, the patient's upper arch, and an occlusion alignment between the upper and lower arches, and modify the virtual 3D representation by adding a first virtual alignment structure to the lower arch and a second virtual alignment structure to the upper arch, the first and second virtual alignment structures shaped to engage each other to produce the occlusion alignment between the upper and lower arches; and a physical model of the dentition comprising, a lower arch model having lower teeth and an upper arch model having upper teeth, said physical model based on the modified virtual 3D representation, a first single continuous piece comprising the lower arch model and a first alignment structure extending from and integrally formed with the lower arch model, the first alignment structure shaped according to the first virtual alignment structure, and a second single continuous piece comprising the upper arch model and a second alignment structure extending from and integrally formed with the upper arch model, the second alignment structure shaped according to the second virtual alignment structure, wherein one or more of a first plurality of first positioning reference components or a second plurality of second positioning reference components are formed to allow the first plurality of first positioning reference components to come into reversible contact with the second plurality of second positioning reference components in a fixed spatial relationship to thereby provide the occlusion alignment between the lower teeth of the lower arch model and the upper teeth of the upper arch model based on said modified virtual 3D representation.

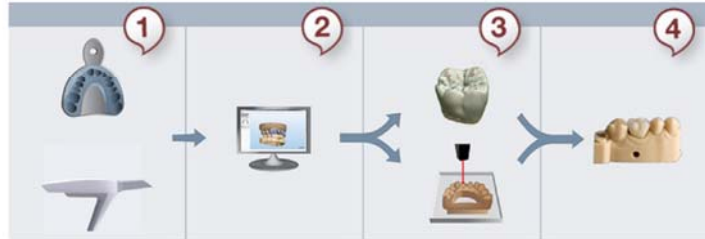
83. 3Shape's TRIOS, TRIOS 3, and/or the related Dental System software products, infringe at least claim 1 of the '916 patent. For example, the Dental System can be used for fabricating dental appliances, said the system comprises of a processor operably coupled to a

computer readable storage medium comprising instructions that, when executed, cause the processor to: receive a virtual three dimensional (3D) representation of a patient's lower arch, the patient's upper arch, and an occlusion alignment between the upper and lower arches, and modify the virtual 3D representation by adding a first virtual alignment structure to the lower arch and a second virtual alignment structure to the upper arch, the first and second virtual alignment structures shaped to engage each other to produce the occlusion alignment between the upper and lower arches; and a physical model of the dentition comprising, a lower arch model having lower teeth and an upper arch model having upper teeth, said physical model based on the modified virtual 3D representation, a first single continuous piece comprising the lower arch model and a first alignment structure extending from and integrally formed with the lower arch model, the first alignment structure shaped according to the first virtual alignment structure, and a second single continuous piece comprising the upper arch model and a second alignment structure extending from and integrally formed with the upper arch model, the second alignment structure shaped according to the second virtual alignment structure, wherein one or more of a first plurality of first positioning reference components or a second plurality of second positioning reference components are formed to allow the first plurality of first positioning reference components to come into reversible contact with the second plurality of second positioning reference components in a fixed spatial relationship to thereby provide the occlusion alignment between the lower teeth of the lower arch model and the upper teeth of the upper arch model based on said modified virtual 3D representation, as shown, for example, in the 3Shape user manual and marketing videos below.

7. Model Builder

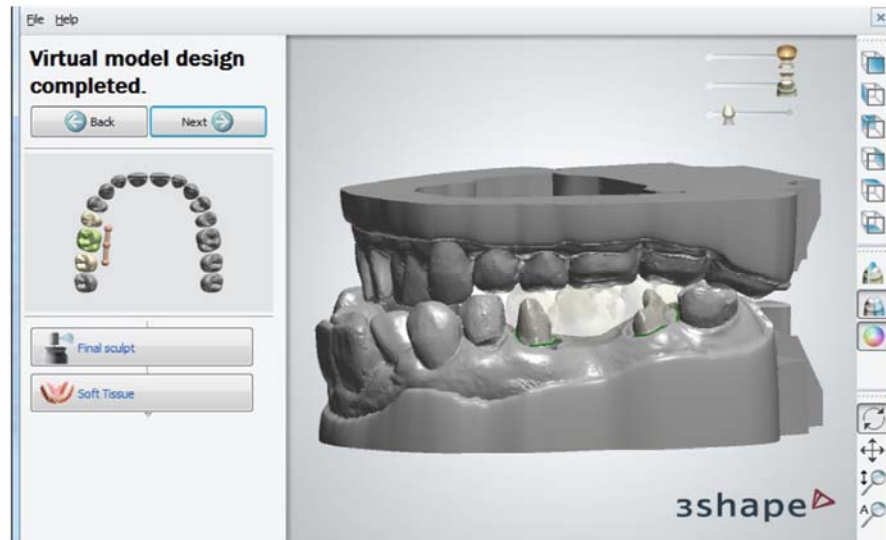
3Shape Model Builder™ allows you to design lab models for an extensive range of indications including implant models, from intraoral scans, physical impression scans and gypsum scans. You can easily produce all lab models locally, either in-house or through your manufacturing center, bypassing slow and expensive manufacturing services bound to the scanner device. 3Shape Model Builder™ supports 3Shape TRIOS and many other validated digital impression-taking solutions, 3D-printers and milling machines while storing machine-specific parameters in editable, reusable profiles.

The following image shows 3Shape Model Builder™ workflow:

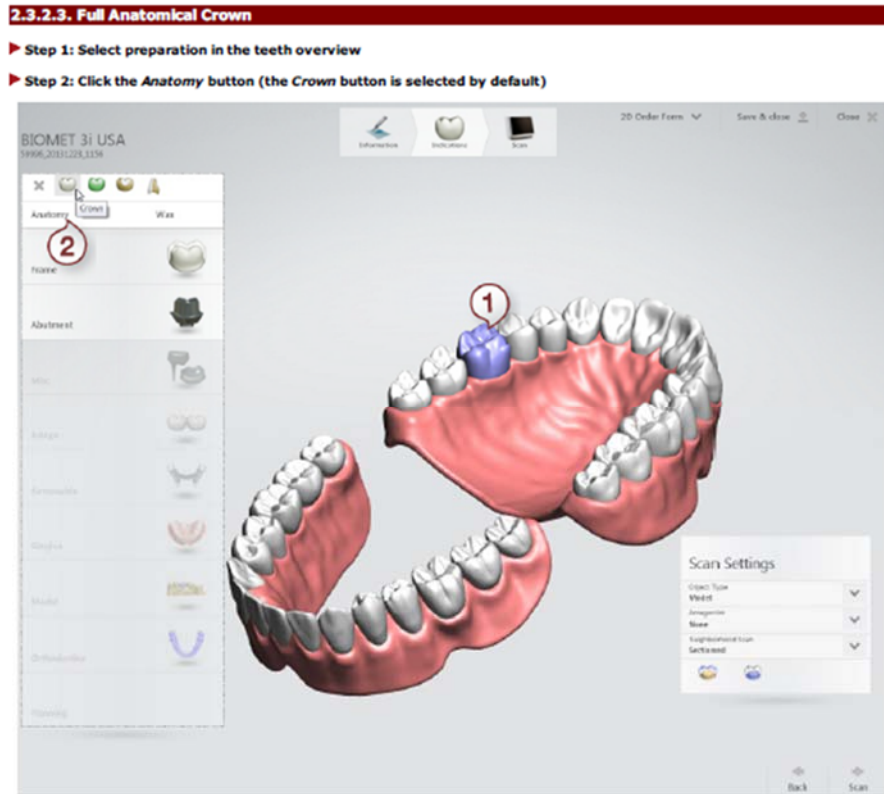


Step 1: Intraoral or Impression Scanning
 Step 2: Virtual Model Design
 Step 3: Restoration Design and Model Manufacturing
 Step 4: Finalizing Restoration

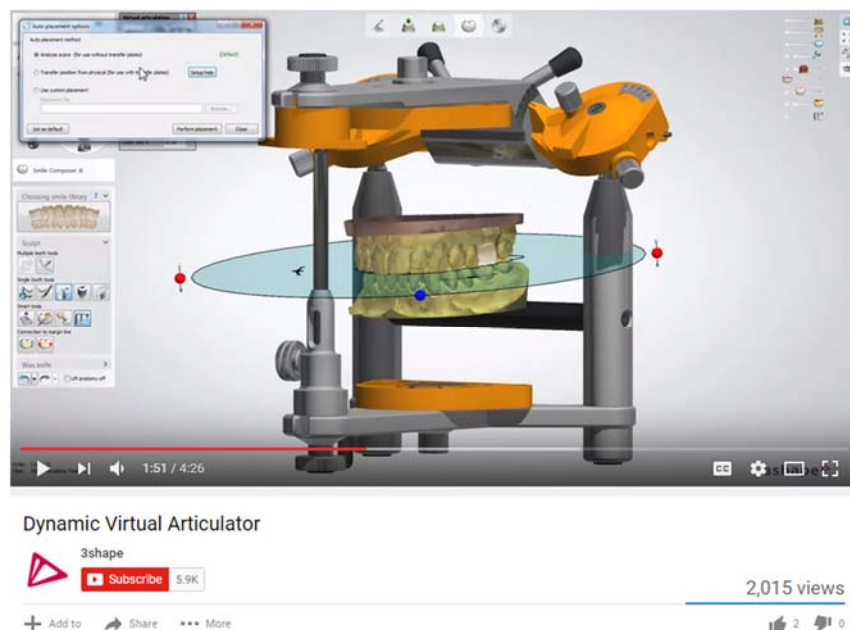
(See, e.g., 3Shape Dental System 2014 User Manual at Chapter 7.)



(Id.)

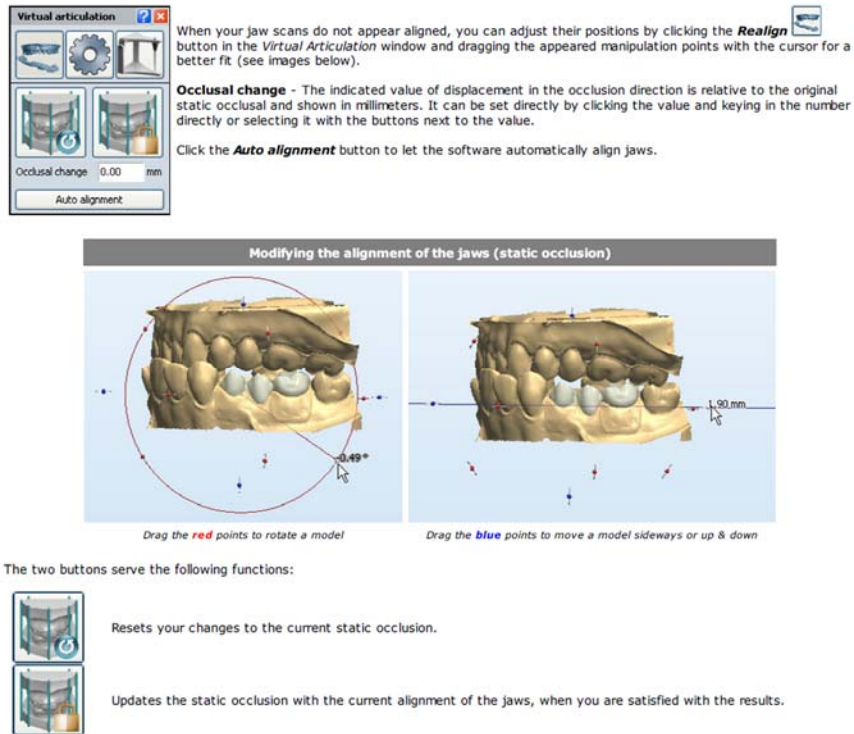


(Id. at Chapter 2.3.2.3.)

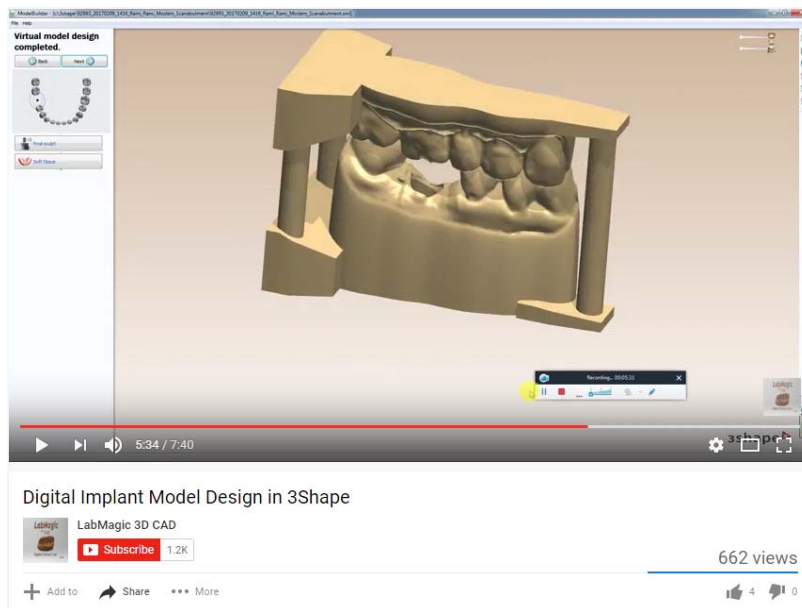


(See, e.g., 3Shape marketing video (3Shape website, available at:

<https://www.youtube.com/watch?v=DvWcCgBmJcA>.)

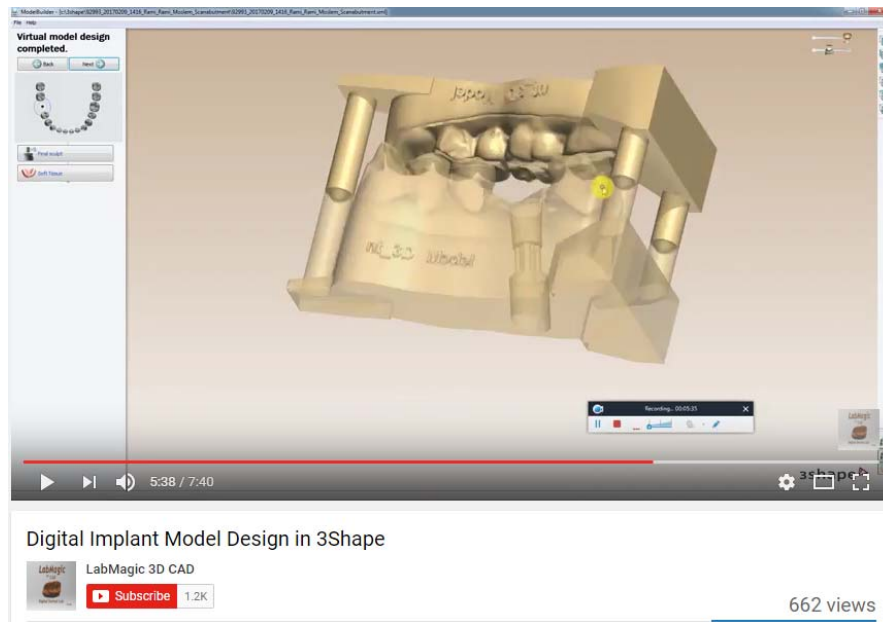


(See, e.g., 3Shape Dental System 2014 User Manual at Chapter 6.6.)



(See, e.g., 3Shape marketing video (3Shape YouTube channel, available at:

<https://www.youtube.com/watch?v=5AkeTHr5mxc>.)



(*Id.*)

84. 3Shape possesses knowledge of and is aware of the '916 patent by virtue of, at a minimum, filing this Complaint and, on information and belief, had prior knowledge of the '916 patent by virtue of the prior business dealings between 3Shape and Align and other facts described above.

85. 3Shape also has been and is now actively inducing infringement of one or more claims of the '916 patent, either literally or under the doctrine of equivalents.

86. On information and belief, 3Shape A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape A/S induces 3Shape US and/or 3Shape Trios A/S to infringe.

87. On information and belief, 3Shape US alone and/or acting in concert with, directing and/or authorizing 3Shape A/S and/or 3Shape Trios A/S to make, use, sell or offer for

sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others.

88. On information and belief, 3Shape Trios A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape Trios A/S induces 3Shape US and/or 3Shape A/S to infringe.

89. 3Shape has intended, and continues to intend to induce infringement of the '916 patent by others and has knowledge, with specific intent, that the inducing acts would cause infringement or has been willfully blind to the possibility that its inducing acts would cause the infringing acts. For example, 3Shape is aware that the features claimed in the '916 patent are features in the TRIOS, TRIOS 3, and/or the related Dental System software products and are features used by others that purchase TRIOS, TRIOS 3, and/or the related Dental System software products and, therefore, that purchasers will infringe the '916 patent by using the TRIOS, TRIOS 3, and/or Dental System. 3Shape actively induces infringement of the '916 patent with knowledge and the specific intent to encourage that infringement by, *inter alia*, disseminating the TRIOS, TRIOS 3, and/or the related Dental System software products and providing promotional materials, marketing materials, training materials, instructions, product manuals, user guides, and technical information to others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products (including but

not limited to the user manual and marketing videos described in this Count of the Complaint). Those third parties directly infringe the '916 patent by making, using, selling, offering for sale, and/or importing the TRIOS, TRIOS 3, and/or the related Dental System software products.

90. 3Shape also has been and is now contributing to the infringement of one or more claims of the '916 patent, either literally or under the doctrine of equivalents.

91. 3Shape has actively, knowingly, and intentionally contributed and continues to actively, knowingly, and intentionally contribute to the infringement of the '916 patent by having sold or offered to sell and continuing to sell or offer for sale the TRIOS, TRIOS 3, and/or the related Dental System software products within in the United States and/or by importing the TRIOS, TRIOS 3, and/or the related Dental System software products into the United States, with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is especially made and/or especially adapted for use in infringement of the '916 patent. 3Shape has contributed to the infringement by others with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is a material part of the patented invention, and with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is not a staple article of commerce suitable for substantial non-infringing use, and with knowledge that others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products, infringe and will continue to infringe the '916 patent because, due to their specific designs, the accused products and components thereof do not have any substantial noninfringing uses. 3Shape has such knowledge at least because the claimed features of the '916 patent are used by others including, but not limited to, resellers, distributors,

customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products.

92. On information and belief, 3Shape knew or should have known of the '916 patent and has acted, and continues to act, in an egregious and wanton manner by infringing '916 patent. On information and belief, 3Shape's infringement of the '916 patent has been and continues to be willful and deliberate. The market for intraoral scanners and related dental and orthodontic software products is small and contains a limited number of competitors, with Align being a known pioneer with whom 3Shape has great familiarity. The companies have worked together in the past and 3Shape has had ample access to Align's technology. Upon information and belief, 3Shape knowingly developed and sold its competitive knockoff products in an infringing manner that was known to 3Shape or was so obvious that 3Shape should have known about this infringement.

93. On information and belief, despite knowing that its actions constituted infringement of the '916 patent and/or despite knowing that there was a high likelihood that its actions constituted infringement of the patent, 3Shape nevertheless continued its infringing actions, and continues to make, use and sell its infringing products.

94. 3Shape's acts of infringement have injured and damaged Align.

95. 3Shape's wrongful conduct has caused Align to suffer irreparable harm resulting from the loss of its lawful patent rights to exclude others from making, using, selling, offering to sell and importing the patented inventions. Upon information and belief, 3Shape will continue these infringing acts unless enjoined by this Court.

COUNT FIVE – INFRINGEMENT OF THE '364 PATENT

96. Align incorporates by reference its allegations in Paragraphs 1-95 as if fully restated in this paragraph.

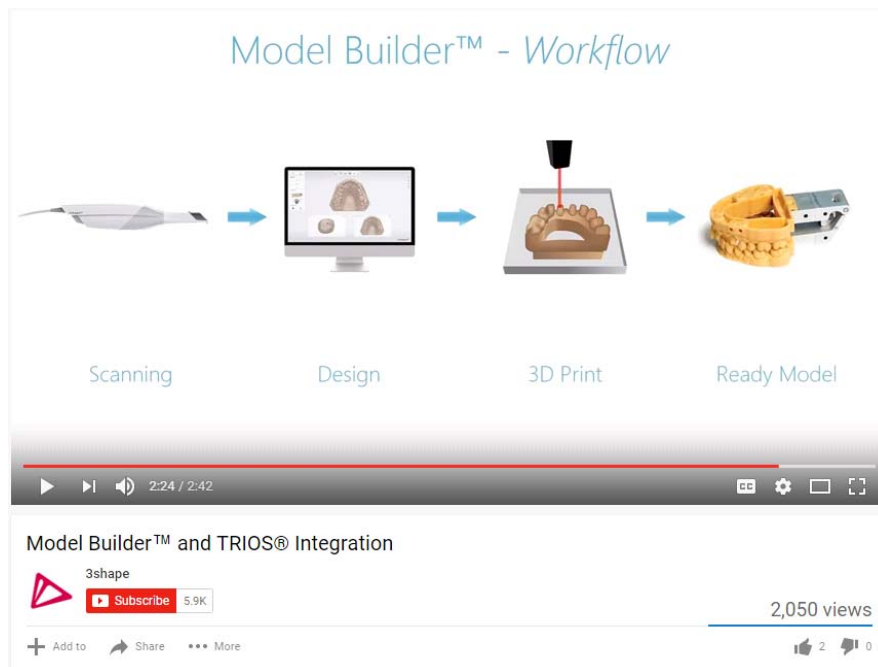
97. On information and belief, 3Shape has been and is now directly and indirectly infringing, literally and/or under the doctrine of equivalents, the '364 patent by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products covered by one or more of the claims of the '364 patent, including the TRIOS and TRIOS 3, as well as the related Dental System software products.

98. The '364 patent is generally directed to creating a physical three-dimensional model with 3D data obtained from the physical structure to provide a modified virtual model. Claim 16 of the '364 patent recites a method for creating a physical three dimensional (3D) model comprising: using a computer system: providing a three dimensional (3D) virtual model of a patient's dentition including virtual model components corresponding to at least a part of each upper and lower jaw thereof and comprising virtual dental surfaces; providing 3D data representative of at least the spatial relationship between said jaws in occlusion; defining a virtual alignment arrangement by incorporating in said 3D virtual model one or more virtual structural reference components comprising a first structure of the upper jaw that couples together with a second structure of the lower jaw so as to define an alignment arrangement for said 3D virtual model based on said 3D data, thereby defining an updated 3D virtual model, said one or more virtual structural reference components configured to provide virtual occlusion alignment between said virtual model components according to the spatial relationship; and (b) following step (a), preparing a positive physical three dimensional (3D) model including physical model components that respectively represent said virtual model components, based on

said updated 3D virtual model obtained in step (a), wherein said physical model components are produced incorporating one or more physical structural reference components respectively corresponding to said one or more virtual structural reference components to enable selectively providing physical occlusion alignment of the physical 3D model corresponding to the virtual occlusion alignment.

99. 3Shape's TRIOS, TRIOS 3, and/or the related Dental System software products, infringe at least claim 16 of the '364 patent. For example, the related Dental System software products provide for a method for creating a physical three dimensional (3D) model which comprises of (a) using a computer system to provide a three dimensional (3D) virtual model of a patient's dentition including virtual model components corresponding to at least a part of each upper and lower jaw thereof and comprising virtual dental surfaces; providing 3D data representative of at least the spatial relationship between said jaws in occlusion; defining a virtual alignment arrangement by incorporating in said 3D virtual model one or more virtual structural reference components comprising a first structure of the upper jaw that couples together with a second structure of the lower jaw so as to define an alignment arrangement for said 3D virtual model based on said 3D data, thereby defining an updated 3D virtual model, said one or more virtual structural reference components configured to provide virtual occlusion alignment between said virtual model components according to the spatial relationship; and following step (a), preparing a positive physical three dimensional (3D) model including physical model components that respectively represent said virtual model components, based on said updated 3D virtual model obtained in step (a), wherein said physical model components are produced incorporating one or more physical structural reference components respectively corresponding to said one or more virtual structural reference components to enable selectively

providing physical occlusion alignment of the physical 3D model corresponding to the virtual occlusion alignment, as shown, for example, in the 3Shape user manual and marketing videos below.

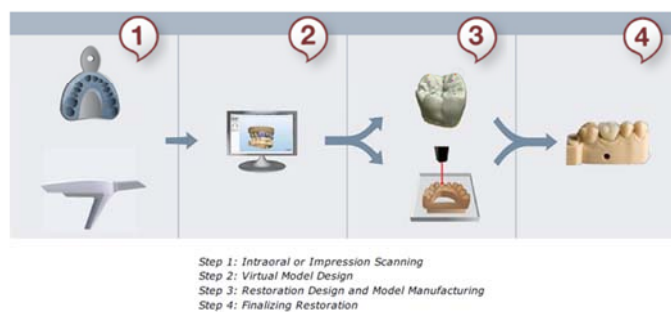


(See, e.g., 3Shape marketing video (3Shape YouTube channel, available at: <https://www.youtube.com/watch?v=gsfgAkk1CpI>)).

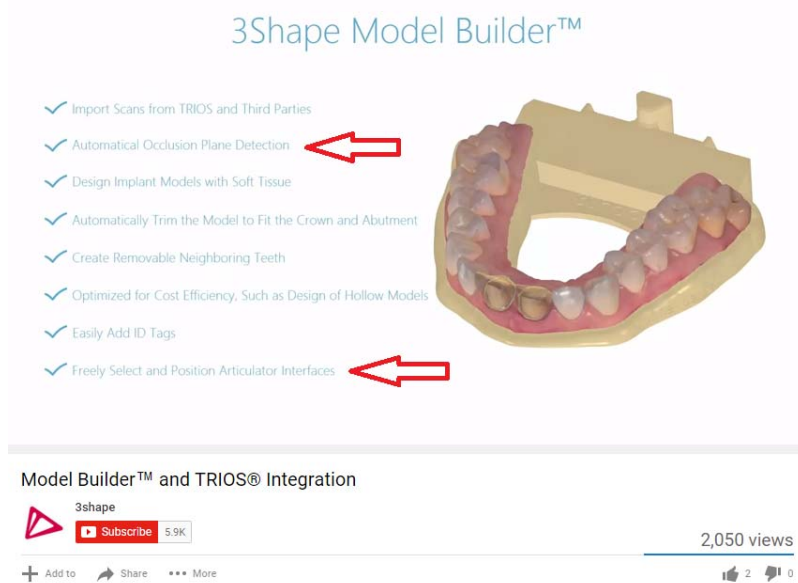
7. Model Builder

3Shape Model Builder™ allows you to design lab models for an extensive range of indications including implant models, from intraoral scans, physical impression scans and gypsum scans. You can easily produce all lab models locally, either in-house or through your manufacturing center, bypassing slow and expensive manufacturing services bound to the scanner device. 3Shape Model Builder™ supports 3Shape TRIOS and many other validated digital impression-taking solutions, 3D-printers and milling machines while storing machine-specific parameters in editable, reusable profiles.

The following image shows 3Shape Model Builder™ workflow:

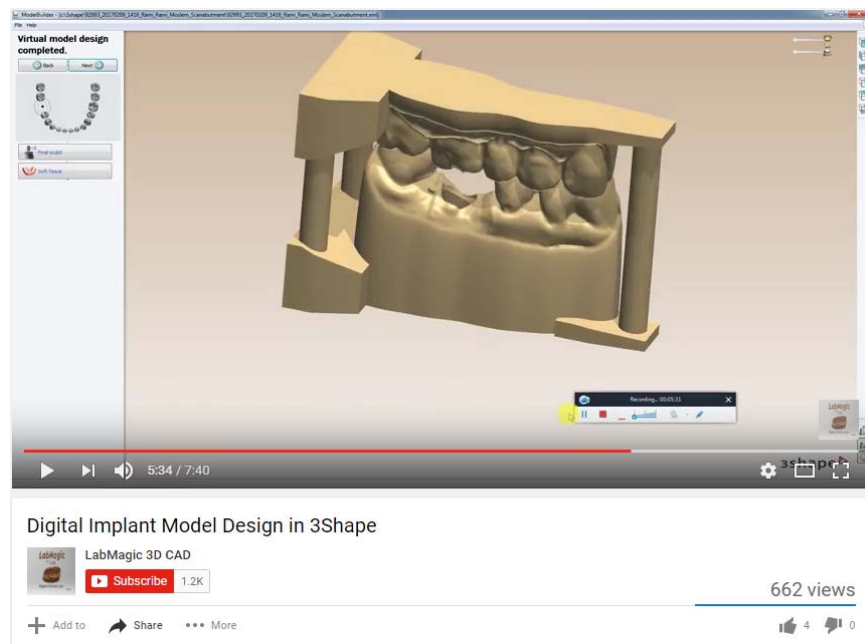


(See, e.g., 3Shape Dental System 2014 User Manual at Chapter 7.)

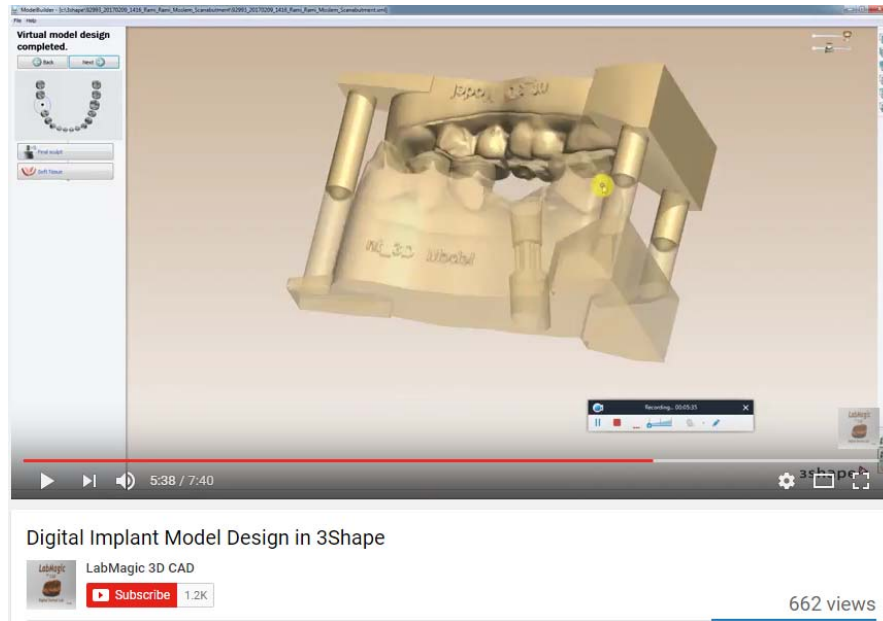


(See, e.g., 3Shape marketing video (3Shape website, available at:

<https://www.youtube.com/watch?v=gsfgAkk1CpI>.)



(See, e.g., 3Shape marketing video (3Shape YouTube channel, available at: <https://www.youtube.com/watch?v=5AkeTHr5mxo>.)



(*Id.*)

100. 3Shape possesses knowledge of and is aware of the '364 patent by virtue of, at a minimum, filing this Complaint and, on information and belief, had prior knowledge of the '364 patent by virtue of the prior business dealings between 3Shape and Align and other facts described above.

101. 3Shape also has been and is now actively inducing infringement of one or more claims of the '364 patent, either literally or under the doctrine of equivalents.

102. On information and belief, 3Shape A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape A/S induces 3Shape US and/or 3Shape Trios A/S to infringe.

103. On information and belief, 3Shape US alone and/or acting in concert with, directing and/or authorizing 3Shape A/S and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others.

104. On information and belief, 3Shape Trios A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape Trios A/S induces 3Shape US and/or 3Shape A/S to infringe.

105. 3Shape has intended, and continues to intend to induce infringement of the '364 patent by others and has knowledge, with specific intent, that the inducing acts would cause infringement or has been willfully blind to the possibility that its inducing acts would cause the infringing acts. For example, 3Shape is aware that the features claimed in the '364 patent are features in the TRIOS, TRIOS 3, and/or the related Dental System software products and are features used by others that purchase TRIOS, TRIOS 3, and/or the related Dental System software products and, therefore, that purchasers will infringe the '364 patent by using the TRIOS, TRIOS 3, and/or the related Dental System software products. 3Shape actively induces infringement of the '364 patent with knowledge and the specific intent to encourage that infringement by, *inter alia*, disseminating the TRIOS, TRIOS 3, and/or the related Dental System software products and providing promotional materials, marketing materials, training materials, instructions, product manuals, user guides, and technical information to others

including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products (including but not limited to the user manual and marketing videos described in this Count of the Complaint). Those third parties directly infringe the '364 patent by making, using, selling, offering for sale, and/or importing the TRIOS, TRIOS 3, and/or the related Dental System software products.

106. 3Shape also has been and is now contributing to the infringement of one or more claims of the '364 patent, either literally or under the doctrine of equivalents.

107. 3Shape has actively, knowingly, and intentionally contributed and continues to actively, knowingly, and intentionally contribute to the infringement of the '364 patent by having sold or offered to sell and continuing to sell or offer for sale the TRIOS, TRIOS 3, and/or the related Dental System software products within in the United States and/or by importing the TRIOS, TRIOS 3, and/or the related Dental System software products into the United States, with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is especially made and/or especially adapted for use in infringement of the '364 patent. 3Shape has contributed to the infringement by others with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is a material part of the patented invention, and with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is not a staple article of commerce suitable for substantial non-infringing use, and with knowledge that others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products, infringe and will continue to infringe the '364 patent because,

due to their specific designs, the accused products and components thereof do not have any substantial noninfringing uses. 3Shape has such knowledge at least because the claimed features of the '364 patent are used by others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products.

108. On information and belief, 3Shape knew or should have known of the '364 patent and has acted, and continues to act, in an egregious and wanton manner by infringing '364 patent. On information and belief, 3Shape's infringement of the '364 patent has been and continues to be willful and deliberate. The market for intraoral scanners and related dental and orthodontic software products is small and contains a limited number of competitors, with Align being a known pioneer with whom 3Shape has great familiarity. The companies have worked together in the past and 3Shape has had ample access to Align's technology. Upon information and belief, 3Shape knowingly developed and sold its competitive knockoff products in an infringing manner that was known to 3Shape or was so obvious that 3Shape should have known about this infringement.

109. On information and belief, despite knowing that its actions constituted infringement of the '364 patent and/or despite knowing that that there was a high likelihood that its actions constituted infringement of the patent, 3Shape nevertheless continued its infringing actions, and continues to make, use and sell its infringing products.

110. 3Shape's acts of infringement have injured and damaged Align.

111. 3Shape's wrongful conduct has caused Align to suffer irreparable harm resulting from the loss of its lawful patent rights to exclude others from making, using, selling, offering to

sell and importing the patented inventions. Upon information and belief, 3Shape will continue these infringing acts unless enjoined by this Court.

COUNT SIX – INFRINGEMENT OF THE '330 PATENT

112. Align incorporates by reference its allegations in Paragraphs 1-111 as if fully restated in this paragraph.

113. On information and belief, 3Shape has been and is now directly and indirectly infringing, literally and/or under the doctrine of equivalents, the '330 patent by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products covered by one or more of the claims of the '330 patent, including the TRIOS and TRIOS 3, as well as the related Dental System software products.

114. The '330 patent is directed to modifying a virtual model of a physical structure with additional 3D data obtained from the physical structure to provide a modified virtual model. Claim 16 of the '330 patent recites a system for generating a digital model of teeth, comprising: a processor operably coupled to a computer readable storage medium comprising instructions which, when executed, cause the processor to: (a) receive a three dimensional (3D) virtual model of a patient's dentition including virtual model components corresponding to at least a part of each upper and lower jaw thereof and comprising virtual dental surfaces; (b) receive 3D data representative of at least the spatial relationship between the upper and lower jaws in occlusion; (c) define a virtual alignment arrangement by incorporating in said 3D virtual model one or more virtual structural reference components comprising a first structure of the upper jaw that couples together with a second structure of the lower jaw so as to define an alignment arrangement for said 3D virtual model based on said 3D data, thereby defining an updated 3D virtual model, said one or more virtual structural reference components configured to provide virtual occlusion

alignment between said virtual model components according to the spatial relationship; and (d) following step (a), output data for preparing a positive physical three dimensional (3D) model, the data including virtual model components representing physical model components based on said updated 3D virtual model obtained in step (a), wherein the physical model components include one or more physical structural reference components corresponding to the one or more virtual structural reference components to enable selectively providing physical occlusion alignment of the physical 3D model corresponding to the virtual occlusion alignment.

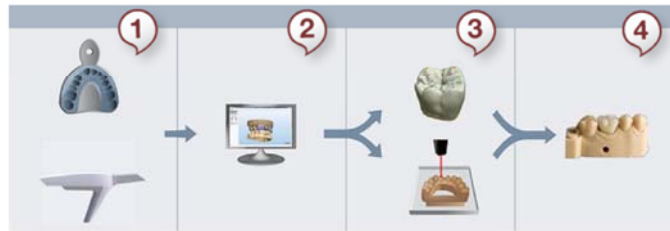
115. 3Shape's TRIOS, TRIOS 3, and/or the related Dental System software products, infringe at least claim 16 of the '330 patent. For example, the related Dental System software products provide for a system for generating a digital model of teeth, which comprises of: a processor operably coupled to a computer readable storage medium comprising instructions which, when executed, cause the processor to: (a) receive a three dimensional (3D) virtual model of a patient's dentition including virtual model components corresponding to at least a part of each upper and lower jaw thereof and comprising virtual dental surfaces; (b) receive 3D data representative of at least the spatial relationship between the upper and lower jaws in occlusion; (c) define a virtual alignment arrangement by incorporating in said 3D virtual model one or more virtual structural reference components comprising a first structure of the upper jaw that couples together with a second structure of the lower jaw so as to define an alignment arrangement for said 3D virtual model based on said 3D data, thereby defining an updated 3D virtual model, said one or more virtual structural reference components configured to provide virtual occlusion alignment between said virtual model components according to the spatial relationship; and (d) following step (a), output data for preparing a positive physical three dimensional (3D) model, the data including virtual model components representing physical model components based on

said updated 3D virtual model obtained in step (a), wherein the physical model components include one or more physical structural reference components corresponding to the one or more virtual structural reference components to enable selectively providing physical occlusion alignment of the physical 3D model corresponding to the virtual occlusion alignment, as shown, for example, in the 3Shape user manual and marketing videos below.

7. Model Builder

3Shape Model Builder™ allows you to design lab models for an extensive range of indications including implant models, from intraoral scans, physical impression scans and gypsum scans. You can easily produce all lab models locally, either in-house or through your manufacturing center, bypassing slow and expensive manufacturing services bound to the scanner device. 3Shape Model Builder™ supports 3Shape TRIOS and many other validated digital impression-taking solutions, 3D-printers and milling machines while storing machine-specific parameters in editable, reusable profiles.

The following image shows 3Shape Model Builder™ workflow:



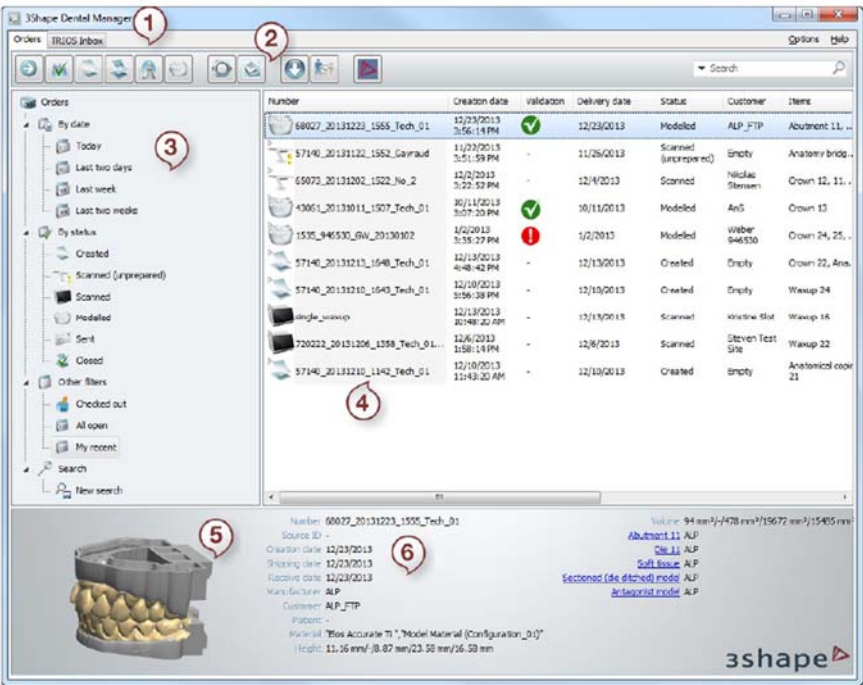
Step 1: Intraoral or Impression Scanning
 Step 2: Virtual Model Design
 Step 3: Restoration Design and Model Manufacturing
 Step 4: Finalizing Restoration

(See, e.g., 3Shape Dental System user manual at Chapter 7.)

2.1. User Interface

Start the application by clicking the Dental Manager desktop shortcut. You will be prompted by a window similar to the one below:

MAIN WINDOW



1. Main menu
2. Workflow bar
3. Order filters
4. Orders
5. 3D preview
6. Info on selected item

MAIN MENU

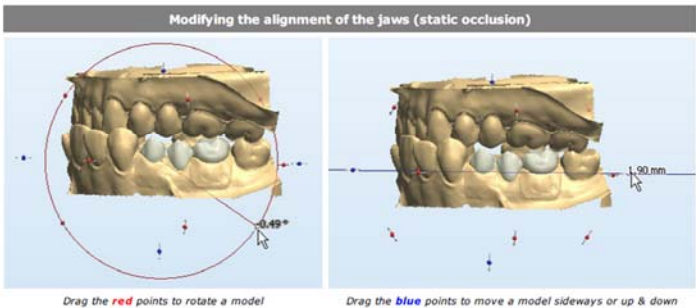
(Id. at Chapter 2.1.)



When your jaw scans do not appear aligned, you can adjust their positions by clicking the **Realign** button in the **Virtual Articulation** window and dragging the appeared manipulation points with the cursor for a better fit (see images below).

Occlusal change - The indicated value of displacement in the occlusion direction is relative to the original static occlusal and shown in millimeters. It can be set directly by clicking the value and keying in the number directly or selecting it with the buttons next to the value.

Click the **Auto alignment** button to let the software automatically align jaws.



The two buttons serve the following functions:



Resets your changes to the current static occlusion.

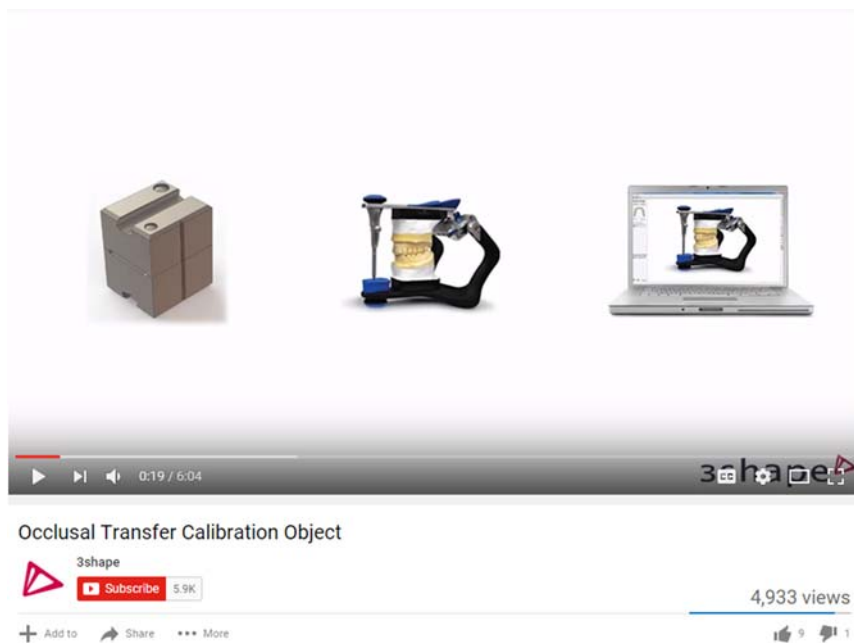
Updates the static occlusion with the current alignment of the jaws, when you are satisfied with the results.

(*Id.* at Chapter 6.6.)



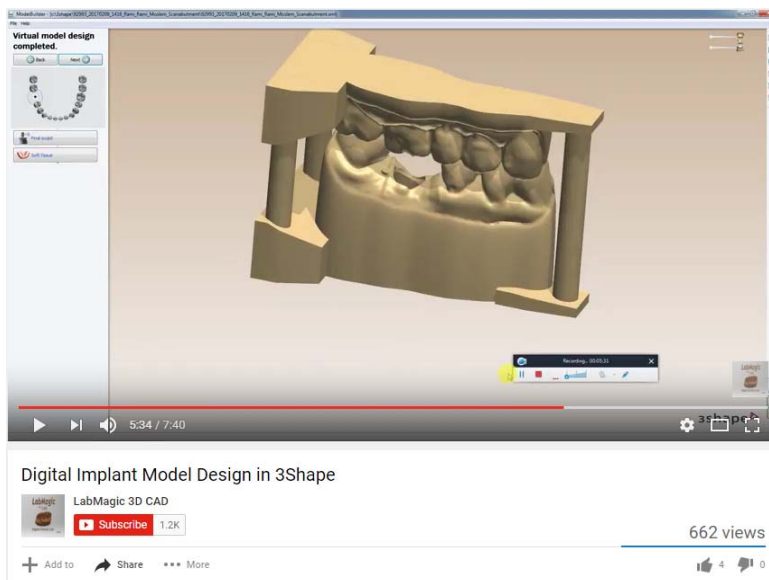
(*See, e.g.*, 3Shape marketing video (3Shape website, available at:

<https://www.youtube.com/watch?v=DvWcCgBmJcA>.)

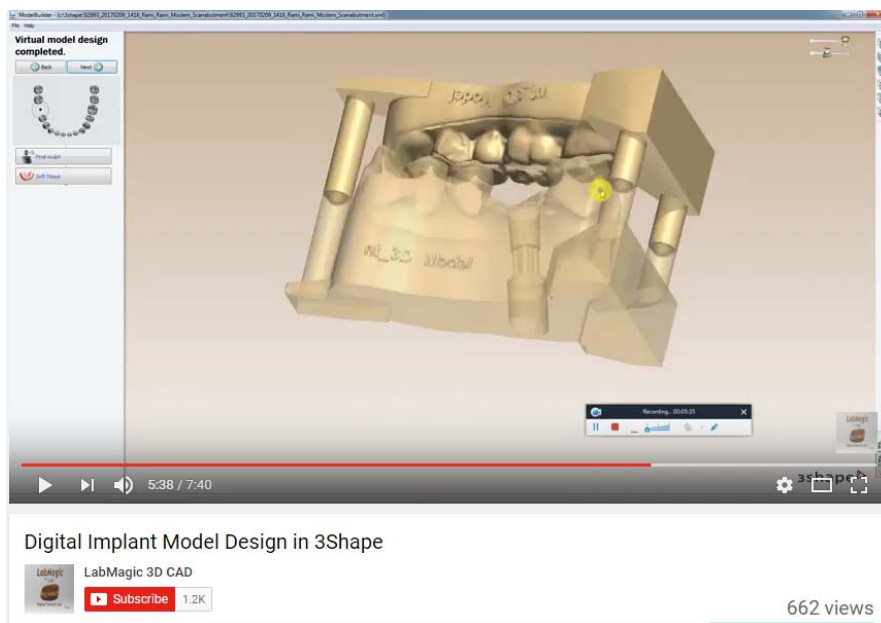


(*See, e.g.*, 3Shape marketing video (3Shape website, available at:

<https://www.youtube.com/watch?v=Hz51tMOiX3A&t>.)



(See, e.g., 3Shape marketing video (3Shape YouTube channel, available at: <https://www.youtube.com/watch?v=5AkeTHr5mxc>)).



(Id.)

116. 3Shape possesses knowledge of and is aware of the '330 patent by virtue of, at a minimum, filing this Complaint and, on information and belief, had prior knowledge of the '330

patent by virtue of the prior business dealings between 3Shape and Align and other facts described above.

117. 3Shape also has been and is now actively inducing infringement of one or more claims of the '330 patent, either literally or under the doctrine of equivalents.

118. On information and belief, 3Shape A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape A/S induces 3Shape US and/or 3Shape Trios A/S to infringe.

119. On information and belief, 3Shape US alone and/or acting in concert with, directing and/or authorizing 3Shape A/S and/or 3Shape Trios A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others.

120. On information and belief, 3Shape Trios A/S alone and/or acting in concert with, directing and/or authorizing 3Shape US and/or 3Shape A/S to make, use, sell or offer for sale in the United States or import into the United States the TRIOS, TRIOS 3, and/or the related Dental System software products, possesses an affirmative intent to actively induce infringement by others. On information and belief, 3Shape Trios A/S induces 3Shape US and/or 3Shape A/S to infringe.

121. 3Shape has intended, and continues to intend to induce infringement of the '330 patent by others and has knowledge, with specific intent, that the inducing acts would cause

infringement or has been willfully blind to the possibility that its inducing acts would cause the infringing acts. For example, 3Shape is aware that the features claimed in the '330 patent are features in the TRIOS, TRIOS 3, and/or the related Dental System software products and are features used by others that purchase TRIOS, TRIOS 3, and/or the related Dental System software products and, therefore, that purchasers will infringe the '330 patent by using the TRIOS, TRIOS 3, and/or the related Dental System software products. 3Shape actively induces infringement of the '330 patent with knowledge and the specific intent to encourage that infringement by, *inter alia*, disseminating the TRIOS, TRIOS 3, and/or the related Dental System software products and providing promotional materials, marketing materials, training materials, instructions, product manuals, user guides, and technical information to others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products (including but not limited to the user manual and marketing videos described in this Count of the Complaint). Those third parties directly infringe the '330 patent by making, using, selling, offering for sale, and/or importing the TRIOS, TRIOS 3, and/or the related Dental System software products.

122. 3Shape also has been and is now contributing to the infringement of one or more claims of the '330 patent, either literally or under the doctrine of equivalents.

123. 3Shape has actively, knowingly, and intentionally contributed and continues to actively, knowingly, and intentionally contribute to the infringement of the '330 patent by having sold or offered to sell and continuing to sell or offer for sale the TRIOS, TRIOS 3, and/or the related Dental System software products within in the United States and/or by importing the TRIOS, TRIOS 3, and/or the related Dental System software products into the United States,

with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is especially made and/or especially adapted for use in infringement of the '330 patent. 3Shape has contributed to the infringement by others with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is a material part of the patented invention, and with knowledge that the infringing technology in the TRIOS, TRIOS 3, and/or the related Dental System software products is not a staple article of commerce suitable for substantial non-infringing use, and with knowledge that others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products, infringe and will continue to infringe the '330 patent because, due to their specific designs, the accused products and components thereof do not have any substantial noninfringing uses. 3Shape has such knowledge at least because the claimed features of the '330 patent are used by others including, but not limited to, resellers, distributors, customers, dentists, orthodontists, dental and orthodontic labs, and/or other end users of the TRIOS, TRIOS 3, and/or the related Dental System software products.

124. On information and belief, 3Shape knew or should have known of the '330 patent and has acted, and continues to act, in an egregious and wanton manner by infringing '330 patent. On information and belief, 3Shape's infringement of the '330 patent has been and continues to be willful and deliberate. The market for intraoral scanners and related dental and orthodontic software products is small and contains a limited number of competitors, with Align being a known pioneer with whom 3Shape has great familiarity. The companies have worked together in the past and 3Shape has had ample access to Align's technology. Upon information and belief, 3Shape knowingly developed and sold its competitive knockoff products in an

infringing manner that was known to 3Shape or was so obvious that 3Shape should have known about this infringement.

125. On information and belief, despite knowing that its actions constituted infringement of the '330 patent and/or despite knowing that there was a high likelihood that its actions constituted infringement of the patent, 3Shape nevertheless continued its infringing actions, and continues to make, use and sell its infringing products.

126. 3Shape's acts of infringement have injured and damaged Align.

127. 3Shape's wrongful conduct has caused Align to suffer irreparable harm resulting from the loss of its lawful patent rights to exclude others from making, using, selling, offering to sell and importing the patented inventions. Upon information and belief, 3Shape will continue these infringing acts unless enjoined by this Court.

PRAYER FOR RELIEF

WHEREFORE, Align respectfully requests that this Court:

- a. enter a judgment that Align is the owner of all right, title, and interest in and to the patents-in-suit, together with all the rights of recovery under such patents for past and future infringement thereof;
- b. enter a judgment that 3Shape has infringed each of the patents-in-suit;
- c. enter a judgment that the patents-in-suit are valid and enforceable;
- d. permanently enjoin 3Shape, their parents, subsidiaries, affiliates, agents, servants, employees, attorneys, representatives, successors and assigns, and all others in active concert or participation with them from infringing the patents-in-suit;
- e. order an award of damages to Align in an amount adequate to compensate Align for 3Shape's infringement, said damages to be no less than a reasonable royalty;

f. enter a judgment that the infringement was willful and treble damages pursuant to 35 U.S.C. § 284;

g. order an accounting to determine the damages to be awarded to Align as a result of 3Shape's infringement, including an accounting for infringing sales not presented at trial and award additional damages for any such infringing sales;

h. assess pre-judgment and post judgment interest and costs against 3Shape, together with an award of such interest and costs, in accordance with 35 U.S.C. § 284;

i. render a finding that this case is "exceptional" and award to Align its costs, expenses and reasonable attorneys' fees, as provided by 35 U.S.C. § 285; and

j. grant such other and further relief as the Court may deem proper and just.

DEMAND FOR A JURY TRIAL

Align hereby respectfully requests a trial by jury of all issues so triable, pursuant to FED.

R. Civ. P. 38.

OF COUNSEL:

Blair M. Jacobs
Christina A. Ondrick
John S. Holley
PAUL HASTINGS LLP
875 15th Street, N.W.
Washington, DC 20005
(202) 551-1705

Thomas A. Counts
PAUL HASTINGS LLP
101 California Street
Forty-Eighth Floor
San Francisco, CA 94111
(410) 856-7000

/s/ Jeff Castellano

John W. Shaw (No. 3362)
Karen E. Keller (No. 4489)
Jeff Castellano (No. 4837)
SHAW KELLER LLP
I.M. Pei Building
1105 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 298-0700
jshaw@shawkeller.com
kkeller@shawkeller.com
jcastellano@shawkeller.com
Attorneys for Plaintiff

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